



TRMM Flight Operations Monthly Status Review (MSR)

March 27, 2002



FOT Subsystem Overview

- Operations Status
 - Flight Ops Summary - Lou Kurzmiller
 - Electrical/Thermal - Dave Sepan
 - RCS - Dave Sepan
 - Power & Deployables - Justin Knavel
 - ACS & FDS / C&DH - Mark Fioravanti
 - RF / Comm - Nega Berhanu
 - LIS - Nega Berhanu
 - CERES & VIRS - Mark Fioravanti
 - TMI - Dave Sepan
 - PR – Justin Knavel
 - Ground System – Justin Knavel
 - Upcoming Activities – Justin Knavel



Flight Operations Summary

- Supported 535 SN events in March
 - 1 Yaw Maneuver; now +X
 - 8 Delta-V Maneuvers
- 2 Event Rpts, 1 Late Acq, No Anomaly Rpts
 - ER # 258: MOC H/W; Prime String Crashed
 - ER # 259: NASCOM; Data Dropouts on I & Q-Chnls



Flight Operations Summary

- Notable Events
 - Continued support of ERBS EOL activities.
- FOT has lost services of our long time Lead Engineer.
- Expect to retain services of a former TRMM FOT subsystem engineer.



Thermal / Electrical Subsystems

- The Thermal subsystem remains nominal
 - No operational issues since arrival at 402.5 km

- The Electrical subsystem remains nominal
 - No operational issues since arrival at 402.5 km



RCS Subsystem

- RCS performed 8 successful Delta-V maneuvers (#380 - #387)
 - Current fuel remaining is 292 kg.
 - Current Precision Pressure Transducer level is down to 167.7 psia.
- RCS subsystem is beginning to “blow down” and is no longer pressure regulated.
- The current EOL estimate at 402.5 km is September 2003 using 157 kg of fuel as a baseline for controlled re-entry.
- Upcoming Events
 - Continue to review and train with Delta-H procedure, EOL scripts, and the “one-shot” procedure.
 - Review all required steps for a 30+ minute Delta-V maneuver and test with the simulator.



Power Subsystem

- Open issues
 - Essential Bus Voltage Monitor Backup (S/C Processor Current)
 - » Code Test Review (March 28th)
 - » Complete and uplink Filtering Code (Early April)
 - Solar Array off-pointing
 - » Test Delta V and Yaw maneuvers with simulator
 - » Longer duration on-board test



Deployables Subsystem

- Solar array drives and HGA continue to operate nominally.



ACS Subsystem

- ACS is performing Nominally.
- EPVs are now being uplinked once a day.
 - Using Geopotential method (Selections are those that are closest to 20:00z daily).
 - FDF will be providing TDRSS Ephemeris files to match the TRMM file times so as to avoid potential confusion when uplinking daily TRMM and TDRSS EPVs.



FDS/C&DH Subsystems

- UTCF/FS Status;
 - 2 UTCF Adjustments were performed.
 - » 1st on 02-061 (Mar., 2nd) and the 2nd on 02-071 (Mar., 12th)
 - » Current UTCF value is 31535996.808350 sec
 - » No Leap Second update in June.
 - 1 FS Adjustment was performed on 02-061 (Mar., 2nd).
 - » Current FS value is x'7EA'.
- Planned RTS Changes
 - Nominal TDRS AOS RTS format changes to allow easier modification as DS storage status changes, and to simplify transponder offsets if required.
 - Initially will be performed with RTSs 65 - 68, other AOS RTSs may also be converted later.
 - On hold until completion of telemetry filter.



RF Subsystem

- 1 Generic Late Acquisition (#117) since last MSR.
 - 079/07:04:21z TDW Event: Locked up 07:05:52z : All data recovered
- Frequency offsets (monthly average)
 - Transponder #1 = + 743.793 Hz
 - Transponder #2 = - 778.396 Hz
- Upcoming Events
 - Offset of transponder center frequencies should occur this year.



LIS Instrument

- 1 Routine MSFC real-time command request was performed on 02-077 (March 18th) to reduce packet sequence errors.
- No open issues



CERES/VIRS Instruments

- **CERES.**
 - Powered OFF.
- **VIRS**, continues to operate nominally.
 - Two sets of VIRS Solar Calibrations were performed on 02-080 (Thurs., March 21st).



TMI / PR Instruments

- No Open Issues with the TMI instrument
- PR External Calibrations were performed on 02-066 (March 7th) at 04:14:45 and 05:52:23 (bins 46 and 40) and on 02-067 (March 8th) at 04:56:54 (bin 63).



Ground System / Security

- Backup router tests – next week
- GITT scans – March 27th
- 3rd Security Risk Reduction Analysis Corrective Action Plan (CAP) meeting held to finalize action item assignments and time completion goals



Upcoming Activities

- 0-2 Months
 - Uplink PSIB Alternate Telemetry Patch and dwell tables (April)
 - Perform remaining FSW revisions due to new Kalman Filter mode of operations and Boost activities
 - » 2000 Epoch Magnetic Field Patch
 - » Table 51 DSS Tolerance Versions
 - » Table 54 Update for Roll/Pitch/Yaw to 15°/8°/8°
 - Place remaining permanent table / patch changes into EEPROM
 - Select which Trending system to obtain / implement for MOC upgrade
 - Support finalization of TRMM End of Life and Reentry Plan
 - Perform SA 55° offset long-duration test



Upcoming Activities

- 2-3 Months
 - Install new TDRS HGA AOS RTSs
 - Begin implementing new MOC trending system
 - Continue trade studies for upgrading other MOC ground system and software components
 - Participate in End of Life Plan review(s)
 - End Of Life Plan Testing, and Simulations continue
 - Continue to close open CCRs, MOCRs, and MSR Action Items